Applied Objects and the Syntax-Semantics Interface

Abstract: This paper investigates the syntax-semantics interface within of the realization of applied objects in Bantu languages, and I argue that the syntactic structure and semantic contribution of a given argument-licensing functional head (here, the applicative) do not covary. Specifically, I show that in principle both high and low applicatives can (and should) be available with any type of applicative and not tied to a specific semantics (such as transfer-of-possession), as proposed in earlier work (e.g., Pylkkänen 2008). Furthermore, I reject the centrality of thematic roles as a component of grammar which determines the grammatical function of applied objects, and I propose instead a typology of Bantu applied objects based on their semantic and morphological properties. This approach makes several predictions about applied objects: (i) syntactic and semantic diagnostics for high and low applicatives need not pattern together, (ii) syntactic asymmetry (such as c-command) can arise for applied objects which pattern symmetrically with other diagnostics (such as passivization), and (iii) the type of the applied object does not universally capture symmetry properties cross-linguistically. The view put forward in this paper provides a framework that can better capture this type of variation with object symmetry in Bantu languages as well as language-internal facts about applied objects.

KEYWORDS: applicative morphology, syntax-semantics interface, object symmetry, argument realization, Bantu languages

1 Introduction

A central question regarding the interface between syntax and semantics is the degree to which the mapping of the participants entailed by the event to the syntactic argument positions licensed by the verb is determined by the semantic nature of those participants. While considerable lexical semantic work has addressed this question from a variety of theoretical perspectives, the majority of this work has focused on Indo-European languages and phenomena typical of those languages (such as dative shift). In a separate vein, a large body of research on Bantu languages has focused on the question of the grammatical function of applied objects that are licensed by applicative morphemes. In this paper, I set out to link these two domains by reframing the discussion of so-called “object symmetry,” and to do so, I investigate the degree to which the semantics of applied objects correlates with the syntax. Ultimately, I make two interrelated claims about the syntax and semantics of applied objects which bears not only on the empirical facts related to applicative morphology but also the nature of the interface between syntax and semantics more broadly.

First, I show that formally there is no need to assume a correlation between putative thematic role and the syntactic structure (which thus derives the “symmetry” between objects on many views). I then specifically argue that applied objects should in fact not universally correspond to a particular syntax based on their meaning. Building on previous work in which applicative heads are claimed to differ in their position in relation to the V head in a division known as “high” and “low” applicatives, I assume
(with various others) that high applicatives are symmetrical and low applicatives are asymmetrical, but I propose that languages vary in which type of applicative appears with either high or low structures. Crucially, the pairing of high or low syntax with a particular applied object is not determined by the thematic role (which I separately address) of the applied object, but rather arbitrarily categorized in a particular language.

Second, building on decades of lexical semantic work which has raised many empirical and theoretical issues with the notion of thematic roles, I argue that the linking of particular applied object types to specific patterns of “symmetry” is not (or rather, cannot be) driven by their putative thematic role, but rather, the types of applied objects that are observed arise from combinations of other facts about the applied object. I claim that two such aspects of Bantu applied objects can capture the most frequently discussed applied object types: animacy of the applied object and morphological marking with locative class prefixes. I argue that particular combinations of animacy/locative-marking of a given applied object are linked to a particular applied object type (e.g., so-called benefactive or locative applicatives), which are in turn associated with one of the two possible applicative head types (high or low) in a given language. This allows us to investigate the syntax of applied objects without relying on the problematized notion of thematic roles.

This account makes various predictions about the syntax and semantics of applied objects: First, it makes the prediction that the semantics of an applicative in a particular language does not necessarily pattern with any specific syntactic properties, and I show that this mismatch arises with Kinyarwanda applicatives where despite being syntactically “high,” there are cases where the applicative is semantically “low,” which would be a problem for other accounts but follows naturally on the analysis proposed here. Second, I assume an account in which high applicatives are symmetrical and low applicatives are asymmetrical, but by the nature of these structures, it is predicted that there should still be an asymmetry in c-command facts regardless of symmetry with other diagnostics. I present data from Kinyarwanda which show that this is borne out. Finally, on the view proposed here, it is expected that languages vary in the syntactic behavior different applied object types exhibit with regards to symmetry: crucially, there should be no universal tendencies based on the semantics of the applied object. From comparative data from several Bantu languages, I show here that these various predictions indeed come to bear, and it emerges that the degree to which applied object type affects symmetry properties, it does not universally capture the variation among languages. Specifically, I show that there exist opposite symmetry patterns for each of the applied object types, which is problematic on the assumption that thematic role correlates with a particular grammatical function. On the account proposed here, the observed cross-linguistic variation follows naturally.

The structure of the paper is as follows. In section 2 I provide a brief overview of the literature on the syntax of applied objects. In Section 3 I show there is no formal reason to assume that the semantics and syntax of an applicative must correlate, and then I propose a revised semantics for high and low applicatives which allows for variation in the semantic contributions of different applicative heads. Section 4 summarizes some of the main concerns from previous work on the issues with thematic roles, and I show that thematic roles have persisted (albeit often indirectly) as an explanatory device in much of the current work on applied objects. Bringing the points in Sections 3 and 4 together,
I lay out three predictions of this analysis in Section 5. I conclude the discussion in Section 6 and point to questions which remain for future work on applied objects within the framework I have proposed.

2 Background: The Syntax of Applied Objects

The applicative morpheme is traditionally understood as a verbal suffix which has the function of adding a new object to the argument structure of a verb and assigning a thematic role to that object (Dixon & Aikhenvald 1997, Peterson 2007). Applicative morphology is found in many languages of the world, and Bantu languages have been of particular interest given the microvariation in the syntax of cognate applicative suffixes. Consider the data in (1) from Chichewa (Bantu; Malawi), where the applicative morpheme –ir adds an additional object mwana ‘child’ in (1b).

(1) a. A-mfumu a-na-mang-a nyumba.
   2-chief 2S-PST-build-FV 9.house
   ‘The chief built the house.’

   b. A-mfumu a-na-mang-ir-a mw-ana nyumba.
   2-chief 2S-PST-build-APPL-FV 1-child 9.house
   ‘The chief built the house for the child.’  (Chichewa)

When the applicative is used with transitive verbs such as ku-manga ‘to build’, the resultant verb in (1b) is a derived ditransitive with two putative objects. A heavily debated topic in the syntax of applicatives has been whether the grammatical function of the applied object (i.e., the object added via the applicative) is similar or different to the grammatical function of the verbal object (i.e., the object licensed by the non-applied transitive verb) and why such (a)symmetry may arise between the two (Kisseberth & Abasheikh 1977, Gary & Keenan 1977, Kimenyi 1980, Perlmutter & Postal 1983, Baker 1988b, Bresnan & Moshi 1993, McGinnis 2001, McGinnis & Gerdts 2003, Ngonyani & Githinji 2006, Jeong 2007, Zeller 2015, van der Wal 2017, Ackerman et al. 2017, inter alia). Several grammatical tests have been used to diagnose the grammatical function of each of the two putative objects.

One such diagnostic is whether either object can be the subject of a passive. In (2), we see two examples of passive counterparts to the sentence in (1b), as indicated by the passive suffix –idw on the verb ku-manga ‘to build’. The difference between the two sentences is that in (2a) the Beneficiary applied object is permitted as the subject of a passive, while the verbal object in (2b) is not.

(2) a. Mw-ana a-na-mang-ir-idw-a nyumba ndi a-mfumu.
   1-child 1S-PST-build-APPL-PASS-FV 9.house by 2-chief
   ‘The child was built the house by the chief.’

   b. *Nyumba i-na-mang-ir-idw-a mw-ana ndi a-mfumu.
   9.house 9S-PST-build-APPL-PASS-FV 1-child by 2-chief
   ‘The house was built for the child by the chief.’ (Chichewa)
Similarly, only the Beneficiary object can appear as an object pronoun on the verb, as in (3a); the verbal object in (3b), on the other hand, cannot be an object pronoun.

(3) a. A-mfumu a-na-mu-mang-ir-a nyumba.
   2-chief 2S-PST-1O-build-APPL-FV 9.house
   ‘The chief built the house for him/her.’

b. *A-mfumu a-na-i-mang-ir-a mw-ana.
   2-chief 2S-PST-9O-build-APPL-FV 1-child
   ‘The chief built it for the child.’ (Chichewa)

From diagnostics such as passivization and object-marking\(^2\) (as well as a variety of others, such as whether the argument can be extracted in a relative clause and restrictions of order between the two putative objects), the applied and verbal objects in (1b) are considered “asymmetrical” (an observation for Chichewa going back to at least Baker 1988b); the objecthood properties differ between the two, and the applied object has preference in positions generally reserved for the single object of a transitive verb.

For some authors, such as Bresnan & Moshi (1990), the crucial evidence that there is true “symmetry” between the grammatical functions (in other words, that both have true access to objecthood diagnostics) is that both objects can undergo these diagnostics simultaneously—e.g., the verbal object is the subject of a passive and the applied object is object-marked. However, I contend that this is not necessary to show that two objects have the same or different status with respect to their grammatical functions, and subsequent work has shown that whether multiple objects show objecthood properties simultaneously is a separate parameter of variation (see, e.g., Marten et al. 2007). Thus, in this paper I define a symmetrical construction as one in which either object has access to objecthood diagnostics (this view has been referred to as “alternating” in Alsina 1996) and an asymmetrical construction as one in which the verbal object is prevented from access to these diagnostics in the presence of an applied object. As discussed in detail in Section 5.3, it is crucially not the case that a language itself is symmetrical or asymmetrical, but rather a particular applicative type in a given language is either symmetrical or asymmetrical.

2.1 Previous Approaches to the Syntax of Applied Objects

The first wave of generative work on object symmetry analyzed applicativization as an operation which promotes an oblique to a full object (Gary & Keenan 1977, Kissberth & Abasheikh 1977, Kimenyi 1980, Dryer 1983, Perlmutter & Postal 1983). One claim is that there is no grammatical distinction between the applied and verbal objects in certain languages such as Kinyarwanda where objects are generally assumed to be symmetrical (Gary & Keenan 1977, but see Dryer 1983 for some asymmetries in Kinyarwanda). Other languages such as Chimwi:ni differ in that the two objects do not share the same syntactic behavior, and for these cases, Kissberth & Abasheikh (1977) propose that applicativization puts the verbal object en chômage, a special grammatical relation proposed in Relational Grammar for objects that have been demoted from full object status. The chômeur is no longer able to undergo objecthood operations such as
raising in passivization, thus capturing the asymmetries between the applied and verbal objects.

In a different framework, Baker (1988a,b) argues that the differences in the symmetry patterns of thematic roles corresponds to differences in the assignment of Case. Comparing instrumental and benefactive applicatives in Chichewa, Baker argues that Instrument applied objects are assigned inherent Case by the verb, while Beneficiary applied objects receive structural Case from a null preposition. Due to being assigned structural Case, there are two predictions about Beneficiary applied objects. First, arguments which receive structural Case must precede those which receive inherent Case. Furthermore, on the assumption that object-markers are only permitted for arguments checked for structural Case, it is predicted that the Beneficiary can be object marked, while the verbal object (which gets inherent Case) cannot. With instrumental applicatives, either the Instrument applied object or the verbal object can receive inherent Case, so word order is predicted to be free, and either (but not both) is permitted to be object-marked on the verb. In short, Baker (1988b) captures difference between Instrument and Beneficiary applied objects by proposing that the former can receive inherent Case, while the latter cannot.

In response to Baker, Alsina & Mchombo (1990, 1993) argue instead that the distinction arises from the position of an applied object’s associated thematic role on the thematic role hierarchy in (4), adopted from Bresnan & Kanerva (1989). Using LFG’s Lexical Mapping Theory which deconstructs grammatical functions via the features \([\pm o]\) for objective (whether the grammatical function is a type of object) and \([\pm r]\) for restricted (whether the grammatical function is restricted to a specific set of thematic roles). Their analysis is that while any internal argument can receive the intrinsic classification of \([\pm r]\), any internal role hierarchically lower than Goal/Experiencer can additionally have the intrinsic classification of \([+o]\).

\[(4) \quad \text{ag} > \text{ben} > \text{go/exp} > \text{ins} > \text{pt/th} > \text{loc} \]

(Alsina & Mchombo 1993:24,(9))

Given its position in the hierarchy, the Beneficiary applied object can only have the intrinsic classification of \([\pm r]\), while the Instrumental object can be assigned \([\pm r]\) or \([+o]\). In an applied predicate, the Beneficiary is unrestricted (namely, it is the “core” object) while the theme is the restricted object, meaning the Beneficiary applied object must precede the verbal object and can also be object marked. With instrumental applicatives, on the other hand, either the Instrument applied object or the verbal object can receive either classification, meaning that word order is free and both can be object-marked on the verb—thus capturing the Chichewa facts. On this view, the position of the thematic role of the applied object determines its intrinsic classification, which in turn derives the grammatical functions of the applied and verbal objects.

Bresnan & Moshi (1990) expand on Alsina & Mchombo’s (1993) analysis in an attempt to tackle variation of applicative behavior across different languages’ Beneficiary objects, and they propose a parameter of variation in which certain languages prohibit two arguments from having the object grammatical function. In the terminology of the Lexical Mapping Theory which they use, the constraint is that only one theta role can be intrinsically classified with the feature \([\pm r]\) in some languages. This has the
result of an asymmetry between the applied and verbal objects since only the applied object is unrestricted (e.g., able to be the subject of a passive). Other languages lack the restriction on the number of roles that may be assigned the [-r] feature, permitting that two roles may simultaneously be intrinsically classified with the [-r] feature; these latter languages are those where there is object symmetry and both the thematic and applied objects can be, e.g., subjects of passives. The generalization, then, is that languages parametrically differ in whether they allow multiple intrinsic classifications of [-r], and it is those languages that do not allow multiple [-r] classifications which have asymmetrical scenarios for benefactive applicatives.

Many recent approaches make use of Pylkkänen’s (2008) distinction between so-called high and low applicatives to capture object symmetry. In Pylkkänen’s original typology, these two kinds of applicative head differ in how the applied object is related to the verb. While the high applicative in (5a) relates an event to an individual, the low applicative head in (5b) relates two individuals.

(5) a. HApplP
    \( \text{AO} \) \( \text{Appl} \) \( \text{HAppl VP} \) \( \text{V} \) \( \text{VO} \)

b. \( \text{VP} \)
    \( \text{V} \) \( \text{LApplP} \)
    \( \text{AO} \) \( \text{LAppl} \) \( \text{Appl VO} \)

The high-low typology was originally proposed to capture an array of facts separate from object symmetry. For example, because low applicatives relate two participants, Pylkkänen proposes that they are unable to combine with unergative verbs (which only have an external argument, and thus no verbal object).

Various approaches have adopted this distinction in capturing differences in objecthood between the applied and verbal object, but the details of what drives the difference between high and low applicatives are debated. Broadly, there have been three aspects of grammar that have been argued to underlie object symmetry facts: phases, locality, and Case assignment. First, work by (McGinnis 2000, 2001, McGinnis & Gerdts 2003) invokes phases (cf. Chomsky 2001) as a means for capturing symmetry patterns in Kinyarwanda. With the high applicative, the applied and verbal objects are in separate phases (on the stipulation that the sister to VP—and thus the high applicative head—is a phase boundary), while with the low applicative, both objects are in the same phase. A-movement respects locality, thus a lower argument can raise to the subject position with the high applicative because a phase-EPP feature can be added to the high applicative in the passive, allowing the lower argument to leapfrog over the higher one. Once the verbal object occupies a higher specifier of high applicative head, it is the closest DP to T, and it can move to spec-T. With the low applicative, on the other hand, the ApplP is not a phase, and no phase-EPP feature can be added. Hence, the lower object cannot raise higher than the applied object.

Another approach is that (a)symmetries arise from (anti-)locality conditions (Anagnostopoulou 2003, Jeong 2007, Zeller 2015). For example, Jeong (2007) argues for dispensing with the use of phases in ditransitive structures, and she instead proposes that
anti-locality considerations can derive the distinction between high and low applicatives. Citing Grohmann’s (2003) anti-locality hypothesis which states that “movement must not be too local” (p. 26), Jeong shows that with high applicatives, because the verbal object and applied object are in separate phrasal projections (i.e., separated by VP), the verbal object can adjoin to the outer specifier of HAppP. With LAppP, on the other hand, anti-locality prevents the lower verbal object from moving across the higher applied object since they are in the same projection. The default for Jeong, then, is that when high, the applicative is symmetrical and when low, the applicative structure is asymmetrical, though various language-specific facts, such as inherent Case assignment, may affect this picture (see pp. 42ff for detailed discussion).

Finally, others have proposed that Case (and perhaps some interaction with locality) is what determines symmetry properties (Haddican & Holmberg 2012, 2015, van der Wal 2017, Holmberg et al. 2019). For example, Holmberg et al. (2019) propose that symmetry in double object constructions arises from a combination of Case assignment and movement to the phase edge (assumed to be ApplP; see also McGinnis 2001). For a symmetrical passive construction, the Appl head (which is High in the Pylkkänen sense given that it is external to the VP) can assign Case to either the Theme or the Recipient. When Case is assigned to the verbal object, the Recipient gets Case from T, which in turn attracts the Recipient to Spec TP; when Case is assigned to the Recipient, it becomes deactivated and leaves the verbal object with an unvalued uCase feature, and the Theme thus moves to the phase edge in the outer specifier of the Appl phrase. Variation in languages comes from this latter Case assignment possibility being disallowed for asymmetrical constructions.

What these three views share is the assumption that there is a fundamental syntactic difference that underlies symmetrical and asymmetrical constructions, but what differs is how Case is assigned to the two putative objects, whether locality is enough to derive the differences, or whether the two objects are in the same phase. Behind many of these views is a crucial distinction between high and low applicative heads, with the general consensus (despite different grammatical facts which drive it) being that high applicatives put the verbal and applied objects in a situation which gives them equal access to positions that correspond to object status, while low applicatives put the verbal and applied objects in a situation which give them unequal access to positions that correspond to object status. In the latter situation, it is only the applied object—by virtue of being higher in the structure—which is able to, e.g., raise to be subject of a passive.

What has not been the focus of previous approaches is the role of the meaning of the applied object in determining object symmetry facts; rather, on the classic view, thematic role determines the categorization of a particular applied object as symmetrical or asymmetrical (though mediated through constructs like thematic role hierarchies or differences in Case assignment). My focus in the present paper is to analyze in more detail the semantic contributions of applicatives and how (and whether) thematic role can correlate with object symmetry. For sake of exposition, I assume Pylkkanen’s (2008) distinction between high and low applicatives and Jeong’s (2007) proposal that anti-locality captures the observed (a)symmetries; thus, the working assumption is that high applicatives are symmetrical and low applicatives are asymmetrical. While the choice of anti-locality as driving objecthood facts is not central to the discussion that follows, I note that among the previous accounts, this view is the simplest in that it
does not require any further stipulation beyond the syntactic structure of high and low applicatives—i.e., there is no need to propose phase boundaries or Case-assigning differences in addition to the syntactic facts that come by definition from the syntax of high and low applicative heads. Given this assumption that high and low structures corresponding to symmetry and asymmetry, respectively, my goal for the rest of the paper is to pursue the comparatively under-explored question of what the proper semantic characterization of applicative heads is.

Before moving on, it is worth noting that Ackerman et al. (2017) criticize the view that symmetrical objects derive from a syntactic structure that is asymmetrical, as is the case with the structures in (5) where the high applicative puts the two arguments in an asymmetrical (c-command) relationship but results in the two being symmetrical in terms of their objecthood diagnostics. Ackerman et al. present evidence from the Kordofanian language Moro which suggests that there is no reason to assume an asymmetrical system, and they capture this by proposing that for Moro, the argument with the most Proto-Agent properties will be mapped to Subject, and all remaining arguments are unordered in the predicate’s ARG-ST. In many ways their criticisms fit with the points raised in this paper (especially their critical view of the over-linking of syntax and semantics, fitting with the point I make in the next section). However, they do not centrally discuss the variation among languages’ symmetry facts, and I show in section 5.3 that asymmetry is the default in certain languages. Ultimately, while I implement the high-low distinction as a starting point for building an analysis, my focus is the lexical semantic component of the interface between the linking of semantic participants to syntactic arguments—a point which in principle can be implemented in any syntactic framework and is consistent with many of the facts that Ackerman et al. (2017) present for Moro. I turn to my proposal in the next section.

3 Applicatives and the Syntax-Semantics Interface

The typology between high and low applicatives was originally proposed by Pylkkänen (2008) to capture syntactic and semantic differences between arguments licensed by applicative heads (which may include various kinds of structures beyond applicative morphemes, though these are the focus in the present paper). Semantically, the denotation that Pylkkänen provides for a high applicative is given in (6a) and the denotation for a low applicative in (6b). The corresponding syntactic structures are repeated from (5) in (7a-b).

\[
\begin{align*}
\text{(6) a. } & \text{ApplH } & := & \lambda x \lambda \lambda e [\text{benefactive}(e, x)] \\
\text{b. } & \text{ApplL } & := & \lambda x \lambda y \lambda f(e, x, t) \lambda e [f(e, x) \land \text{theme}(e, x) \land \text{to.the.possession}(x, y)]
\end{align*}
\]
The high applicative head (6a) takes an argument and an event variable as input, and it states that the thematic role of the individual argument is a Beneficiary. The low applicative in (6b), unlike the high applicative, has two individual arguments in addition to taking event variable, with one of the arguments being the object linked to the applied object and the other being linked to the verbal object. Pykkänen argues that the semantics of the low applicative is not simply a general Beneficiary, but rather the low applicative specifies a relation of transfer of the verbal object into the possession of the applied object—fitting with the fact that the denotation relates two different individuals. The central claim of Pykkänen’s analysis is that the syntactic structure and semantic interpretation of applicative heads differ in tandem, i.e., that a different syntax is linked to a different semantics. I argue in this section that variation in the semantics of the applicatives does not have to be linked to variation in the syntax, and, crucially, there is no formal restriction to the two being independent of one another.

With high applicatives, the applicative head is a functional head introducing an argument that is external to the VP. Pykkänen (2008:5-6) draws the parallel between the nature of a high applicative and Kratzer’s (1996) proposal that external arguments are licensed by a VP-dominating voice head. Thus, in order to tease apart the assumptions of the semantics of high applicatives, it is helpful to first consider the details of the analysis of external arguments proposed by Kratzer (1996). She argues that external arguments are licensed by a separate head from the main verb (now often referred to as the “little-v hypothesis”), as in (8).

The intuition behind this analysis is that the external argument is not semantically linked to the main verb and is instead licensed by an external voice head.

A key piece of empirical evidence for the claim that external arguments are not arguments of the verb is that external arguments cannot form idioms with the verb to the exclusion of the internal object, originally put forward in Marantz (1984) and often referred to subsequently as ‘Marantz’s Generalization’ (Kratzer 1996, Harley & Stone 2013). Examples of such verb-object idioms are those in (9) - (10).

(9) a. throw a baseball
    b. throw support behind a candidate
c. throw a boxing match (i.e., take a dive)
d. throw a party
e. throw a fit
(10) a. take a book from the shelf
   b. take a bus to New York
   c. take a nap

(Kratzer 1996:113,(6)-(7))

Crucially, Kratzer points out that with certain verb-object idioms, the verb semantically selects for a property of the object, such as the verb *kill* on the ‘waste’ idiomatic interpretation in (11), where the object must have the property of being an interval of time. This means that in verb-object idioms, the verb specifies semantic conditions on its object argument.

(11) a. kill every evening (that way)
   b. kill an afternoon (reading old Gazettes)
   c. kill a lovely morning (paying overdue bills)  

(Kratzer 1996:114,(9))

The data in (11) show cases in which the verb conditions the interpretation of the object by requiring the object be an interval of time (such that the time interval can be idiomatically ‘killed’). These kinds of conditions on internal arguments are frequent and, crucially, they are distinct from the relationship between the verb and the external object, which are claimed to be ruled out as a possible formation for idioms.4

Returning to the little-ν hypothesis, Kratzer argues that if the external argument is specified as an argument of the verb, then there is no technical obstacle to a verb stating conditions about the external argument (parallel to the idiomatic conditions on objects in (11)), and this is undesired if we want to capture the generalization that external arguments tend to not form idioms with the verb to the exclusion of the internal object(s).5 If external arguments are arguments of the verb, there is nothing preventing conditions such as those in (12) on external arguments, where *f* is a function which yields an output for the individuals *b* (the referent of the subject) and *a* (the referent of the object).

(12) a. If *b* is a time interval, then *f*(a, *b*) = truth iff *a* exists during *b*
   b. If *b* is a place, then *f*(a, *b*) = truth iff *a* is located at *b*
   c. if *b* is a person, then *f*(a, *b*) = truth iff *b* is the legal owner of *a*

(Kratzer 1996:114,(10))

For Kratzer, these kinds of conditions are not desired if Marantz’s Generalization is to be maintained; if the external argument is an argument of the verb, there is nothing preventing the verb from specifying narrow restrictions of the type in (12) on the external argument. However, if the external argument is not an argument of the verb, then no such conditions constraining verb meaning by the subject are possible, which is desired. From this, she proposes that the semantic conditions on the external argument come instead from the voice head, thus separating the semantic relationship between the verb and external argument.
Wechsler (2005), however, shows that there is in fact no technical obstacle to reformulating the conditions in (12) in terms of the voice head Kratzer proposes. He gives the revised conditions in (13), which specify conditions on ‘the Agent of e’, which refers to the external argument that on Kratzer’s approach is licensed outside the verbal projection via the voice head. Crucially, the conditions in (13) can be stated at the level of “big V”—even when the external argument is licensed by voiceP.

\[
\begin{align*}
\text{(13)} & \quad \text{a. If the Agent of } e \text{ is a time interval, then } f(a,e) = \text{truth iff } a \text{ exists during the Agent of } e \\
& \quad \text{b. If the Agent of } e \text{ is a place, then } f(a,e) = \text{truth iff } a \text{ is located at the Agent of } e \\
& \quad \text{c. If the Agent of } e \text{ is a person, the } f(a,e) = \text{truth iff the Agent of } e \text{ is the legal owner of } a \\
\end{align*}
\]

(Wechsler 2005:183,(8))

The conditions in (13) specify the nature of the ‘Agent of e’; thus, even on Kratzer’s little-v proposal, the verb can specify conditions on the external argument. Having the selectional restrictions mediated through the event argument has the same effect in (13) as Kratzer’s undesired restrictions in (12), in effect showing that Kratzer’s little-v hypothesis does not solve the problem it sets out to solve. More broadly, semantic conditions can be stated about arguments that have not yet combined with the predicate, and therefore it is not necessarily the syntactic structure itself which restricts the semantics of particular arguments.

Returning to Pylkkänen’s high-low typology, the semantics she proposes in (6) relies on the same assumption as Kratzer’s analysis; namely, that by virtue of the high applicative being external to the VP, it is not possible to specify semantic information regarding particular arguments of the applied object. She uses this to motivate the putative semantic differences between high and low applicatives, specifically that the high applicative cannot indicate a transfer-of-possession reading because it is external to the VP which contains the internal object (paralleling Kratzer’s treatment of external arguments).

However, in the same way Wechsler (2005) shows that there is no formal obstacle to stating conditions about the external argument on a little-v account, there is again no technical reason that the transfer-of-possession reading cannot be indicated on the high applicative, despite the widespread assumption that this is the case. Specifically, nothing prevents us from proposing the condition in (14) on the meaning of a high applicative, wherein \(a\) is the argument licensed by the applicative and \(f\) is a relation contributed by the applicative.

\[
\begin{align*}
\text{(14)} & \quad \text{If the ‘Theme of } e \text{’ is an individual, then } f(a,e) = \text{truth iff } a \text{ receives the Theme} \\
\end{align*}
\]

Here, the interpretation of the high applicative is contingent upon the applied object \((a)\) receiving the ‘Theme of e’. Thus, despite the fact that the high applicative does not license the Theme, nothing formally prevents specifying a transfer-of-possession reading, parallel to the way that nothing prevents the main verb from specifying conditions on the external argument. Compositionally, one way to capture this generalization would be to define a Recipient role that must receive some entity, though defining a Recipient role for the applied object alone would not be clear about what entity is
transferred in possession. To resolve this, a constraint can be specified that any item received is the Theme of the verb. The denotation of a high applicative with a transfer-of-possession reading would therefore be the following:

\[
\text{[] ApplH} := \lambda x \lambda e[\text{recipient}(e, x) \land \forall y[\text{th}(e, y) \rightarrow \text{receive}(e, x, y)]]
\]

The composition of the head in (15) proceeds exactly as the high applicative in Pylkkänen’s proposal, but with the crucial difference being that this high applicative specifies transfer-of-possession of the Theme to the Recipient.

Conversely, there is no formal barrier which prevents the low applicative from having a general Beneficiary reading, as in the denotation in (16):

\[
\text{[] ApplL} := \lambda x \lambda y \lambda f(e, s, t) \lambda e[f(e, x) \land \text{theme}(e, x) \land \text{beneficiary}(e, y)]
\]

The denotation in (16) is that of a low applicative with a general Beneficiary reading, and it is as compatible with the low applicative syntax in (7b) as the denotation Pylkkänen gives in (6b) for the transfer-of-possession reading. Given that any syntactic structure can in principle be associated with any semantics, the null hypothesis is that there should not be a correlation between the syntax of an applicative and its interpretation.

To summarize, high and low applicatives can be associated with either a general Beneficiary or transfer-of-possession Beneficiary reading:

(17) General Beneficiary Readings
a. \[ \text{HAppl} := \lambda x \lambda e[\text{beneficiary}(e, x)] \]

b. \[ \text{LAppl} := \lambda x \lambda y \lambda f(e, s, t) \lambda e[f(e, x) \land \text{theme}(e, x) \land \text{beneficiary}(e, y)] \]

(18) Transfer-Of-Possession Readings
a. \[ \text{ApplH} := \lambda x \lambda e[\text{Recipient}(e, x) \land \forall y[\text{th}(e, y) \rightarrow \text{receive}(e, x, y)] \]

b. \[ \text{ApplL} := \lambda x \lambda y \lambda f(e, s, t) \lambda e[f(e, x) \land \text{theme}(e, x) \land \text{to.the.possession}(x, y)] \]

Thus, a particular applicative head can in principle have either a high or low syntactic position, with no formal requirement that a high or low applicative be linked to a specific semantics. In other words, a high or low structure is possible with either reading.

So far, the discussion has centered around benefactive applicatives, which were the focus of the original proposal for the high-low typology in Pylkkänen (2008). However, most Bantu languages have a single applicative morpheme that licenses a variety of roles (though I revisit the notion of thematic roles in the next section). Expanding the discussion of the semantics of benefactive applicatives, I propose that either high or low applicative syntax can in principle be associated with a particular thematic applicative type, such as Instrument, Locative, etc. Taking Instrument applied objects as an example, the denotations in (19) indicate the possible semantics of a high or low applicative morpheme associated with an Instrument role.
In (19), the semantics of the Instrument applied object is linked to either a high or low structure.

I propose that in a given language, a particular applicative type is arbitrarily linked to either a high or low applicative. Tying this to the assumption regarding anti-locality discussed in section 2.1 that high applicatives are symmetrical and low applicatives are asymmetrical, whether a particular applied object type is symmetrical is thus not derived from the semantics of the applied object. In principle, a benefactive applicative could be high in one language and low in another, yet in both languages have a general benefactive reading. Furthermore, if a benefactive applicative were high in a given language, the instrumental applicative could be low or high. Crucially, there is no formal reason to assume that a particular applicative type corresponds to a high or low applicative syntax since the categorization of high or low is an arbitrary artifact of the syntax in a particular language. This view is in essence the null hypothesis: there is no necessary link between applicative syntax and the semantic category of the applied object. This makes predictions about the variation in object symmetry facts across languages, which I return to in section 4.3.

Some of the ideas of this proposal are reminiscent of those in Wood & Marantz (2017), who note that the same meanings can be expressed by different functional heads and vice versa. They argue that various types of argument licensing heads (e.g., little-ν, appl, voice, etc.) can be reduced to a single argument introducer, i*, and the observed differences in these heads arise from differences in the syntactic context which the introducer appears (see Wood 2015 for an overview of the semantics they assume). The interpretation of a particular head is determined by its position in the syntax at LF. While their ultimate goals and conclusion are quite different, the present paper argues for the parallel intuition that argument licensing heads (here, high and low applicative heads) are not universally tied to a particular semantics.

Before moving forward, it is worth noting that while I formulate this proposal in terms of Minimalist research on high and low applicative heads, the problems I lay out here pose similar issues for other frameworks. For example, in LFG, Alsina & Mchombo (1993) link thematic role directly to the mapping of particular arguments, but the claim here is that thematic role cannot be directly implicated in the symmetry properties of a particular applicative type (see Jerro 2015 for issues specific to LFG and a possible solution). The crucial point is that there is no inherent link between the semantic contribution of the applicative and its syntactic structure.

4 Types of Applied Objects

In previous literature on object symmetries (see citations in Section 2.1), the notion of thematic role has been central (explicitly or implicitly, depending on the framework) in deriving the patterns of (a)symmetry, but in this section I show that a separate literature has raised several issues with the assumption that thematic roles should serve as a
theoretical basis for deriving argument realization. I present several of these points, and then I propose a preliminary categorization of applied objects that can obviate the need for relying on thematic roles in analyzing object symmetries in Bantu languages.

4.1 Problems for Thematic Roles

The use of thematic roles for deriving argument realization goes back to the earliest days of generative grammar (e.g., Fillmore 1968, 1970, Jackendoff 1972, 1976). However, considerable research has shown that using thematic roles as a means for deriving argument structural generalizations results in various problems (see, e.g., Zubizarreta 1987, Rappaport & Levin 1988, Dowty 1989, *inter alia*), and instead, the mainstay of work on the semantics of argument realization looks instead at how the event structure and the lexical entailments of individual participants (as defined by a particular verb) derive the mapping of verbal arguments. Levin & Rappaport Hovav (2005:38-49), and the literature cited therein, summarize a variety of issues that the literature has brought forward against the use of thematic roles. I discuss three of these here.

First, it is difficult to define the boundaries of distinct thematic roles, and there is little consensus as to what the appropriate boundaries are. For example, Dowty (1991) discusses the issue of what he calls “role fragmentation” (pp553-555). He cites various authors who have subdivided the space of Agent into several (different) numbers of more finely-defined Agents: Jackendoff (1983) proposes Agent and Actor roles, Cruse (1973) splits Agents into four (V olitive, Effective, Initiative, and Agentive), while Lakoff (1977) offers up to fourteen distinct roles. The question that Dowty poses is then: what is the nature of ‘Agent’ in light of these finer distinctions? A related issue come from data such as that in (20) which show that certain verbs, like ‘come’, appear with a Path role as well as different subcomponents of Path, such as Source, Goal, and Route.

(20)  a. Ilhan came home.
    b. Ilhan came to the University.
    c. Alexandria came to the University from her house.
    d. Alexandria came through the park.

(cp. Levin & Rappaport Hovav 2005:42,(15))

Data such as those in (20) further suggest that there is an issue in grain size in the definition of what should be associated with thematic roles; in other words, if it is assumed that Path is a primitive thematic role, then notions like Source, Route, and Goal should in principle not be related. Similarly, Croft (1991) makes the point that while the role of Goal often is thought to subsume Allative, Recipient, and Beneficiary roles, generally these are also treated as separate roles in their own right (pp157-158).

Second, there is no one-to-one correspondence between thematic roles and grammatical functions. This, however, has been generally assumed or explicitly argued to be a core component of grammar, such as the Theta Criterion (Chomsky 1981:35) or the Function-Argument Biumiqueness of Lexical-Functional Grammar (Bresnan 1980:112). Various empirical issues arise with these types of assumptions. For example, some
verbs, such as ‘hand’ and ‘buy’, have subjects which simultaneously have both Agent and Source/Goal roles.

(21)  
   a. Rashida handed the book to the student.
   b. Ayanna bought the books from the university’s book store.

In both sentences in (21), the subject is both the Agent as well as the Source (21a) or Goal (21b) of the transfer of the Theme. These data thus show that multiple thematic roles can in fact appear with a single argument, contra the expectations of generalizations like the Theta Criterion. While some work has shown that there are ways to remove or modify this assumption (e.g., Hornstein 1999), the fact that there is not a one-to-one mapping puts into question the broader utility of thematic roles.

Ultimately, the biggest issue is that thematic roles by themselves provide no real insight into the broader generalizations that derive argument realization. Rappaport & Levin (1988) use the case study of English locative alternation verbs (e.g., ‘spray’, ‘load’) to show that thematic role lists abstract away from the verb in a way that fails to capture the appropriate semantic generalizations of the alternations, and this points to the conclusion that thematic roles are derivative notions which lack any explanatory value in themselves. Ultimately, the cited criticisms above in addition to the lack of any clearly definable independent notion in the grammar, thematic roles are only useful in-so-much as they are a convenient shorthand in discussing the correspondences between the semantic nature of arguments and argument positions in the syntax.

Due to these and other considerations, most approaches to the lexical semantics of argument realization have largely abandoned the centrality of thematic roles in driving the mapping between the syntax and the semantics; instead, argument realization is based on entailments of the verb as coded by a verbal root and template (Lakoff 1965, Jackendoff 1990, 1996, Dowty 1979, Rappaport & Levin 1988, Hale & Keyser 1993, 1997, Levin & Rappaport Hovav 1995, Wunderlich 1997, Rappaport Hovav & Levin 1998, Harley 2003, 2012, Koenig & Davis 2006, Ramchand 2008, inter alia) and/or based on specific entailments associated with the arguments (Ladusaw & Dowty 1988, Dowty 1989, 1991, Primus 1999, Beavers 2010, Grimm 2010, 2011). While the use of roles as descriptive labels or as clusters of entailments (e.g., Dowty’s 1989 L-thematic roles) persists, what has been shown to be problematic is the basing of syntactic generalizations on particular role labels. I argue in the next subsection that this assumption has continued in the domain of determining the objecthood status of the applied object in Bantu applicative constructions.

### 4.2 Thematic Roles and Object (A)symmetries

Many previous approaches to analyzing object asymmetries have relied on the notion of thematic roles to some degree. Some have done so explicitly, such as Alsina & Mchombo (1993) and related work, who tie the mapping of grammatical function directly to thematic roles via generalizations linked to a thematic hierarchy. Given their reliance on the notion of thematic roles for deriving the object asymmetries, such approaches are incompatible with the literature discussed in Section 4.1.

For other approaches, the objecthood status of a particular argument does not directly derive from the thematic role assigned to a particular argument, but often the
assumption is that thematic roles do figure into the categorization of argument structural positions. For example, Pylkkänen (2008) assumes that locative applicatives are low (pp75-77), thus linking thematic role to a particular syntactic position. In some cases, authors have hypothesized the opposite syntactic structures for a particular thematic role; for example, Pylkkänen (2008) assumes that instrumental applicatives are high applicatives (p13), while Marantz (1984) hypothesizes that Instruments must be “inside the VP” (p123,143), and thus low. The crucial point is that there is an assumption through the literature that a particular thematic role will (directly or indirectly) correspond to a particular syntactic structure.

Beyond object asymmetries with applied objects, thematic roles are often implicated as being directly linked to specific syntactic structures. For example, Marantz (1993) puts forward the view that semantic ordering links to order of composition in the syntax (p123-125); for example, he assumes that Beneficiaries (among other roles) are always external to the event while Instruments are within the event. Thus, he explicitly claims that certain thematic roles should always appear in specific syntactic positions given their thematic role, which is incompatible with a view that aims to eliminate thematic roles as an explanatory tool. Relatedly, the claims in the present paper also have ramifications for views which claim that the semantics of non-core thematic roles is isomorphic to conceptual structures. One such view comes from Croft (1991:178-181), who makes the claim that certain roles, such as Instruments and Comitatives, can be defined as individuals which causally precede the argument mapped to direct object, while others, such as Beneficiaries and Recipients, are causally subsequent to the direct object argument. In other words, Croft is arguing that prominence (i.e., grammatical function) should differ based upon the thematic role of the noncore object.

If we abandon the centrality of thematic roles (as I propose) in determining the argument realizational properties of a particular argument, how do we account for the fact that generalizations of applied objects in Bantu languages do in fact differ according to putative “thematic role”? For example, in Section 2.1, I discussed work by Baker (1988b) and Alsina & Mchombo (1993) which show that Chichewa has benefactive applicatives which are asymmetrical, but instrumental applicatives which are symmetrical; the question is, then, how this type of categorization happens if thematic roles cannot directly derive argument realization. I propose that the categorizations that have been pursued have erroneously linked on to thematic roles, but instead these categories can be deconstructed based on morphological and semantic properties of the applied object. I outline this proposal in the next section.

4.3 Applied Object Types in Bantu: A Preliminary Typology

I propose that what have been referred to as thematic roles of applied objects can be categorized via a reduction to two binary oppositions of whether the applied object is marked with a locative class marker and whether the applied object is animate. While previous work has made reference to other kinds of “thematic role” types of applicatives, such as Reason and Goal applicatives, I focus here on what Schadeberg (2003:74) refers to as the “core” roles of Bantu applied objects: Benefactive, Locative, and Instrumental (see also Ngonyani 1998). I leave other applied object types to future research.
Note that the categorization of applied object types can only be coming from the applied objects themselves since most Bantu languages have a system in which all applied objects are licensed by the same form across all applied object types (a synchronic variant of *–Id; see Meeussen 1967, Schadeberg 2003, Good 2005, Pacchiarotti 2017, inter alia for discussion of the historical reconstruction in Proto-Bantu verbal extensions).

I now turn to laying out how applied objects in Bantu can be categorized in a way that does not rely on thematic roles.

First, Locative applied objects are marked with locative prefixes in many Bantu languages. A large body of work on Bantu languages has discussed the morphosyntactic nature of locative phrases, which—unlike the European systems of marking location via case and/or prepositions (see, e.g., van Riemsdijk 1990, Rooryck 1996, Koopman 2000, Svenonius 2007, van Riemsdijk & Huijbrechts 2008)—appear with a locative prefix and are arguments in some languages and prepositional adjuncts in others (Welmers 1973, Bresnan & Kanerva 1989, Bresnan 1994, Bresnan & Mchombo 1995, Rugemalira 2004, Riedel & Marten 2012, Guérois 2016, Zeller & Ngoboka 2018). Unsurprisingly, for languages in which locative phrases behave more like prepositional adjuncts, they do not behave similarly to the verbal object and are thus generally restricted (see, e.g., Marten 2010 on preposition-like locatives in Siswati).

In other languages, and what is the focus for the present discussion, the locative phrase behaves like an argument of the verb, regardless of whether it is an applied object. For example, in Kinyarwanda considerable evidence has shown that locative phrases are arguments of the verb marked by locative class prefixes ku ‘class 17’, mu ‘class 18’, and i ‘class 23’ (Ngoboka 2016, Jerro 2016, Zeller & Ngoboka 2018). One piece of evidence is that the number of locatives permitted within a single clause is restricted. If locatives are adjuncts, it should be possible to have multiple locative phrases; the data in (22), however, show that this is not the case.

(22) a. \textit{Nkusi a-ri kw-ambuka mu n-yanja}  \textit{Nkusi 1S-be INF-cross 18 9-ocean}  \textit{‘Nkusi is crossing the ocean.’}

b. \textit{*Nkusi a-ri kw-ambuka ku n-yanja i Mombasa.}  \textit{Nkusi 1S-be INF-cross 18 9-ocean 23 Mombasa}  \textit{Intended: ‘Nkusi is crossing the ocean from Mombasa.’}

c. \textit{Y-∅-ambuk-*iy-e (mu) n-yanja i Mombasa.}  \textit{1S-PST-cross-APPL-PREFV 18 9-ocean 23 Mombasa}  \textit{‘He crossed the ocean from Mombasa.’} (Kinyarwanda)

In (22a), the verb \textit{kw-ambuka ‘to cross’ has a single locative object. If locatives are indeed adjuncts, one would expect that an additional locative could be added, but (22b) shows that this is not possible. Crucially, this restriction is not semantic or pragmatic; an additional locative is in fact possible if licensed by the locative applicative, as in (22c). What is crucially not permitted is the stacking of multiple locative phrases, which is what should be possible if locatives are indeed adjuncts in this language. Other evidence for locatives as arguments in Kinyarwanda are that they can be replaced by object markers, they can be the subject of a passive, and they can be replaced by verbal...}
locative clitics; I do not discuss this centrally here, but refer the reader to Ngoboka (2016), Jerro (2016), and Zeller & Ngoboka (2018) for further discussion.

In cases where the applicative is licensing an object argument, I propose that the presence of the locative prefix (such as ȃmu in (22)) before the noun in locative phrases formally marks the NP in a way that make these applied objects distinct from other NPs in the applied object position. On this view, the categorization of Locative applied objects arises via formal presence of the locative prefix, and without the locative class prefix on the applied object, the object cannot be categorized as a locative element.

The second distinction that is pertinent to the categorization of applied objects in Bantu is that unmarked (i.e., non-locative) applied objects are distinguished between being animate and inanimate, which in Bantu is both a semantic and morphological distinction. Specifically, in most Bantu languages, humans are overwhelmingly marked by classes 1 and 2 prefixes, which are generally a synchronic variant of Proto-Bantu *mù and *bá–, respectively (Meeussen 1967:97). Animacy is an oft-cited factor in argument prominence with respect to applied objects in specific languages, especially with respect to determining word order (Hawkinson & Hyman 1974, Morolong & Hyman 1972, Hyman & Duranti 1982, Aranovich 2009). In Sesotho, for example, if there is a difference in animacy (e.g. one human and one non-human) between the two post-verbal dependents, the human noun must immediately follow the verb, regardless of the role of the argument (Morolong & Hyman 1972). On the other hand, in Shona, when the applied and verbal object are both human, the Beneficiary applied object must precede the verbal object, as in (23).

(23) Murume a-ka-chek-er-a mukadzi mwana.
man 1S-PST-cut-APPL-FV woman child

‘The man cut the child for the woman.’

#‘The man cut the woman for the child.’

(Hawkinson & Hyman 1974: 151,(10))

The animacy of the verbal and applied objects has been shown affect the syntactic prominence, discourse prominence, and/or word order facts of the post-verbal dependants.

What I argue is that beyond the cases where animacy has been shown to determine the word order between applied and verbal objects, animacy additionally plays a role in the categorization of applied object types. As mentioned above a key difference between locative phrases on the one hand and ‘Beneficiary’ and ‘Instrumental’ objects on the other is the fact that the latter two types are not formally marked to indicate their semantic contribution in the way that locative phrases are unambiguously marked as indicating a location.10 The distinction between the two non-locative thematic ‘types’ of applicative differ in the animacy associated with the noun; prototypically, Beneficiaries are animate and Instruments are inanimate.

Thus, a three-way typology emerges among applied object types: marked nouns (‘Locative’), unmarked animate nouns (‘Beneficiary’), and unmarked inanimate nouns (‘Instrument’).
The larger point made here is that not only is there no inherent tie between the syntax and thematic role as argued in section 3, but further, the linking of a grammatical notion of ‘thematic role’ is problematic in the first place. Instead, the different types of applied objects in Bantu are categorized among themselves via a specific set of morpho-semantic properties, and it is this categorization that is linked to a particular syntax and, crucially, not thematic role. In turn, whether a particular applied object type is high or low correlates with particular symmetry properties, with the working hypothesis being that the high applicative will be symmetrical and the low applicative will be asymmetrical. In the next section I outline three main predictions that follow from this analysis. For the rest of this discussion I will continue to use the traditional labels (Beneficiary, Instrument, and Locative) for these three applied object types, but I do not assume any relationship to their use as thematic role labels.

5 Predictions of the Analysis

In the previous sections I have made two interrelated claims regarding the relationship between the syntax and semantics of argument realization within the domain of Bantu applicative morphology. First, I argued that formally there is no necessary correlation between the semantics of a particular applied object and its syntactic structure as defined by its objecthood properties. Second, I argued that thematic roles should not be relied upon to derive syntactic facts about the mapping of arguments and that applied object types are in fact derived from morpho-semantic properties of the applied object. Taken together, these two claims make various predictions about the syntax and semantics of applied objects. I discuss three predictions in this section: (i) semantic and syntactic diagnostics for high and low applicative status need not align, (ii) asymmetrical c-command is expected for languages which are otherwise symmetrical, and (iii) there is no universal correlation between thematic role and object symmetry.

5.1 A Mismatch Between Syntax and Semantics: Evidence from Kinyarwanda

The proposed analysis (particularly, the discussion in Section 3) claims that the syntax and the semantics of the high and low applicatives should not be correlated; any semantics can in principle be associated with either a high or low structure. The prediction, then, is that there should be cases where the syntactic and semantic properties attributed to Pylkkänen’s original high and low applicative heads do not match. In this section, I present data from the Kinyarwanda benefactive applicative which show that
this expectation is borne out (see Ackerman et al. 2017:28-30 for a comparable point about syntax/semantics mismatches in the Kordofanian language Moro).

Given the traditional assumptions of high and low applicatives, high applicatives can appear with unergative and stative verbs, while low applicatives cannot (cf. Pylkkänen 2008:18ff). In Kinyarwanda, the benefactive can appear with both unergative and stative verbs, as in (24) and (25). This suggests that the applicative is high.

(24)  
\[ N-di-ruk-ir-a \] \[ Karemera. \]
\begin{tabular}{l}
1SG-PRES-run-APPL-IMP Karemera \\
‘I am running for Karemera.’ \\
\end{tabular} \hfill (Kinyarwanda)

(25)  
\[ M-fat-iy-e \] \[ umu-fuka Karemera. \]
\begin{tabular}{l}
1SG-hold-APPL-IMP 3-bag Karemera \\
‘I am holding the bag for Karemera.’ \\
\end{tabular} \hfill (Kinyarwanda)

While the ability for the applicative morpheme to appear with unergatives and statives in (24) and (25) suggests that the Appl head is high in Kinyarwanda benefactive applicatives, the transfer-of-possession reading in (26) is a classic property of low applicatives.\textsuperscript{12}

(26)  
\[ A-z-oher-er-ez-a \] \[ ama-faranga aba-byeyi ba-nye. \]
\begin{tabular}{l}
1S-FUT-send-APPL-1MB-IMP 6-money 2-parent 2-my \\
‘S/he will send my parents money.’ \\
\end{tabular} \hfill (Kinyarwanda)

Thus the benefactive applicative in Kinyarwanda has properties of both a high and low applicative in the original typology—a problem for the original proposal.

One solution would be to claim that the transfer-of-possession reading and the true Beneficiary readings are licensed by homophonous applicative heads which are low (when there is transfer-of-possession) and high (when there is not). This approach would make the prediction, however, that the Recipient reading (by virtue of being associated with a low applicative) should be asymmetrical (on the assumption that high applicatives are symmetrical; see section 2.1). However, this prediction is not borne out: in (27a), both objects are acceptable as the subject of the passive, and in (28), both objects may be marked as an object marker on the verb—crucially, with the transfer reading.

(27)  
a.  
\[ Aba-byeyi ba-nye ba-z-oher-er-ez-w-a \] \[ ama-faranga. \]
\begin{tabular}{l}
2-parents 2-my 2S-FUT-send-APPL-1MB-PASS-IMP 6-money \\
‘(To) my parents will be sent money.’ \\
\end{tabular} \hfill (Kinyarwanda)

b.  
\[ Ama-faranga a-z-oher-er-ez-w-a \] \[ aba-byeyi ba-nye. \]
\begin{tabular}{l}
6-money 6S-FUT-send-APPL-1MB-PASS-IMP 2-parents 2-my \\
‘The money will be sent to my parents.’ \\
\end{tabular} \hfill (Kinyarwanda)

(28)  
a.  
\[ A-za-b-oher-er-ez-a \] \[ ama-faranga. \]
\begin{tabular}{l}
1S-FUT-2O-send-APPL-1MB-IMP 6-money \\
‘S/he will send money to them.’ \\
\end{tabular}
b. A-za-y-oher-er-ez-a  
1S-FUT-6O-send-APPL-1MB-IMP 2-parents 2-my  
‘S/he will send it to my parents.’  
(Kinyarwanda)

The data in (27a) and (28) show that if we follow the proposal that a transfer-of-possession reading is restricted to a low applicative head as originally claimed, it is incongruous with the general proposal that low applicatives are asymmetrical. Thus, the best alternative is that the benefactive applicative is high in Kinyarwanda, regardless of a transfer-of-possession reading.

As an aside, recent work has rethought how transfer-of-possession is introduced into the argument structure (Beavers & Koontz-Garboden 2017), as part of a larger point that roots can in fact contribute template-like entailments such as CAUSE and BECOME (Beavers & Koontz-Garboden 2018, Jerro 2018, Beavers et al. 2019). Building on work by Rappaport Hovav & Levin (2008) and Beavers (2011) on the semantics of ditransitive verbs in English, Beavers & Koontz-Garboden (2017) show that—contra previous approaches wherein caused possession can only be licensed by the template (Arad 2005, Embick 2009, Dunbar & Wellwood 2016)—verbal roots can in fact contribute entailments such as ‘cause’; in the context of the present discussion, this means that what Pytkkänen (2008) calls transfer-of-possession does not necessarily come from an applicative head (which is part of the verbal template), but from those verbal roots which independently entail caused possession.

For Kinyarwanda, there is evidence that this is correct: it is only certain verbs which allow the Recipient reading of the Beneficiary—specifically those roots which independently entail a goal or Recipient third participant, such as k-ohereza ‘to send’ and ku-jugunya ‘to throw’. For example, in (29)—repeated from (26)—the subject of the verb k-ohereza ‘to send’ is sending money to his or her parents, who are the prospective recipients of the money.

1S-FUT-send-APPL-1MB-IMP 6-money 2-parent 2-my  
‘S/he will send my parents money.’  
(Kinyarwanda)

The verb ku-mena ‘to break’ in (30), on the other hand, cannot have a Recipient reading; the applied object can only be interpreted as a deputative benefactive reading (i.e., on behalf of someone else).

(30)  Mukamana y-a-men-ey-e  Karemera igi-kombe.  
Mukamana 1S-PST-break-APPL-PRFV Karemera 7-cup  
‘Mukamana broke the cup on behalf of Karemera/#to Karemera’.  
(Kinyarwanda)

The contrast in the ability to have a Recipient interpretation of the applied object between k-ohereza ‘to send’ and ku-mena ‘to break’ suggests that roots vary in whether they permit the transfer-of-possession reading. From this, the contribution of the applicative head is more general than previously assumed: it contributes a third participant which subsumes Beneficiary and Recipient, and the specific interpretation comes from the verbal root. While I leave an analysis of these facts for future work, this further
suggests that transfer-of-possession cannot reliably diagnose the syntactic structure of templates across verbs since the entailments specific to transfer-of-possession are in fact contributed on a root-by-root basis. This supports the larger point that the applicative head being high or low does not correlate with the semantics of the applied object.

5.2 Asymmetric C-command and Objecthood: Evidence from Kinyarwanda

While the focus so far has been on the dissimilarities between high and low applicatives in terms of their syntactic structure, there is one fact in which both high and low applicatives are the same: they both involve the applied object asymmetrically c-commanding the verbal object. This means that regardless of the other symmetry facts that are present in a particular language, there should always be asymmetrical c-command between the applied and verbal object. This is most clearly tested in a language that has predominantly symmetrical patterns for a particular applicative. Kinyarwanda is such a language; the data in (32) - (34) indicate that the benefactive applicative is symmetrical in this language (thus corresponding to a high applicative, on the view put forward in section 2.1). In (32), either the applied object or the verbal object can be the subject of a passive, cp. the base sentence in (31). Similarly, (33) shows that either can be extracted as the head of a relative clause. The examples in (34) further show that either can be an object marker on the main verb.

(31) *Umu-yobozi y-∅-ubak-iy-e umw-ana in-zu.*
    1-chief 1S-PST-build-APPL-IMP 1-child 9-house

‘The chief built the house for the child.’ (Kinyarwanda)

(32) a. *Umw-ana y-∅-ubak-i-w-e in-zu n’ umu-yobozi.*
    1-child 1S-PST-build-APPL-PASS-PRFV 9-house by 1-chief

‘The child was built the house by the chief.’

b. *In-zu y-∅-ubak-i-w-e umw-ana n’ umu-yobozi.*
    9-house 9S-PST-build-APPL-PASS-PRFV 1-child by 1-chief

‘The house was built for the child by the chief.’

(33) a. *Iyi ni-yo n-zu umu-yobozi y-∅-ubak-iy-e umw-ana.*
    9-this COP-9 9-house 1-chief 1S-PST-build-APPL-PRFV 1-child

‘This is the house that the chief built for the child.’

b. *Uyu ni-we mw-ana umu-yobozi y-∅-ubak-iy-e in-zu.*
    1-this COP-1 1-child 1-chief 1S-PST-build-APPL-PRFV 9-house

‘This is the child for whom the chief built the house.’

    1-chief 1S-PST-1O-build-APPL-PRFV 9-house

‘The chief built the house for him/her.’

b. *Umu-yobozi y-a-y-ubak-iy-e umw-ana.*
    1-chief 1S-PST-9O-build-APPL-PRFV 1-child

‘The chief built it for the child.’
These diagnostics indicate a situation in which there is symmetry between the applied and verbal objects in Kinyarwanda benefactive applicatives.

The benefactive applicative in Kinyarwanda is a high applicative head, which captures the symmetry in (32) to (34), but by nature, the applied object is merged higher than the verbal object, which makes the prediction that c-command facts should be asymmetrical despite there being symmetry otherwise. Using the binding of pronouns by quantification NPs (a classic c-command diagnostic; Barss & Lasnik 1986), we see that this asymmetrical scenario is borne out. In (35a), the applied object can bind into the verbal object, but the opposite is not possible, as in (35b)-(35d).  

   1SGS-PST-throw-APPL-PRFV every 1-man 11-key 11.his  
   ‘I threw each man his key.’

b. *N-a-jugun-y-e buri ru-funguzo umu-gabo wayo.  
   1SGS-PST-throw-APPL-PRFV every 11-key 1-man 1.its  
   ‘I threw each key to its man.’

c. ?N-a-jugun-y-e im-funguzo ze buri mu-gabo.  
   1SGS-PST-throw-APPL-PRFV 10-key 10.his every 1-man  
   ‘I threw his keys to each man.’

d. *N-a-jugun-y-e umu-gabo wayo buri ru-funguzo.  
   1SGS-PST-throw-APPL-PRFV 1-man 1.its every 11-key  
   ‘I threw every key to its man.’ (Kinyarwanda)

In (36a), a similar situation is found with what Barss & Lasnik (1986) call ‘Superiority’ (who adopt the term from Chomsky 1973); here only the applied object can be fronted in a situation in which both objects are question words, as in (36a). Thus, we again see a c-command asymmetry between the two objects.

(36) a. Ni nde w-a-jugun-y-e uru-he ru-funguzo?  
   is who 2SGS-PST-throw-APPL-IMP 11-which 11-key  
   ‘Who did you throw which key?’

b. *Ni uru-he ru-funguzo w-a-jugun-y-e nde?  
   is 10-which 10-key 2SGS-PST-throw-APPL-PRFV who  
   ‘Which key did you throw who?’ (Kinyarwanda)

Given standard assumptions about c-command, the pronoun binding and superiority data indicate that the applied object asymmetrically c-commands the theme, as expected from the structures in (5). Other diagnostics in Kinyarwanda—such as passivization, object marking, and word order—are symmetrical. This follows from the present account since high and low applicatives have the same c-command relationship between the applied and verbal arguments, and therefore, the c-command relationship is predicted to be asymmetrical regardless of their symmetry properties with objecthood diagnostics.
5.3 Cross-linguistic Variation

Given the claim in section 3 that there is no universal link between the applied object type and high or low applicative heads, it is expected that there is no universal link across languages that a particular applied object type will necessarily be symmetrical or asymmetrical.

For each applied object type, there are predicted to be two languages: one which links that applied object type to a high structure and one which links it to a low structure. As was shown in section 3, benefactive applicatives (categorized by being unmarked, animate applied objects), can in principle be high or low, as in (37), with the semantics in (38a) for high applicatives and (38b) for low applicatives.\(^{17}\)

\[(37)\]
\begin{align*}
\text{a. Benefactive Type A (High)} & \quad \text{HApplP} \\
& \quad \text{AO} \quad \text{Appl} \\
& \quad \text{HAppl} \quad \text{VP} \\
& \quad \text{V} \quad \text{VO} \\
\text{b. Benefactive Type B (Low)} & \quad \text{VP} \\
& \quad \text{V} \quad \text{LApplP} \\
& \quad \text{AO} \quad \text{LAppl} \\
& \quad \text{LAppl} \quad \text{VO}
\end{align*}

\[(38)\]
\begin{align*}
\text{a. } [\text{HAppl}] & \equiv \lambda x \lambda e [\text{beneficiary}(e, x)] \\
\text{b. } [\text{LAppl}] & \equiv \lambda x \lambda y \lambda f (e, (s, t)) \lambda e [f(e, x) \land \text{theme}(e, x) \land \text{beneficiary}(e, y)]
\end{align*}

The proposal that the high applicative derives object symmetry and the low applicative derives asymmetry predicts that there should be languages with benefactive applicatives which are symmetrical and languages with benefactives which are asymmetrical. Recall that the beneficiary semantics are identical for both, with the denotations in (38a) and (38b) differing only in how the meanings are composed. This prediction is borne out; in fact, this observation goes back to the seminal cross-linguistic work of Bresnan & Moshi (1990) who show that languages vary in their symmetry properties, showing variation in benefactive applicatives in a host of languages. Consider the data in (39) and (40) from Chichewa and Lubukusu, respectively. While the benefactive in Chichewa is asymmetrical with passivization, it is symmetrical with Lubukusu.

\[(39)\]
\begin{align*}
\text{a. } Mw-\text{ana a-na-mang-ir-idw-a nyumba ndi a-mfumu.} \\
& \text{1-child 1S-PST-build-APPL-PASS-FV 9.house by 2-chief} \\
& \text{‘The child was built the house by the chief.’}
\end{align*}

\[(40)\]
b. *Nyumba i-na-mang-ir-idw-a mw-ana ndi a-mfumu.
   9-house 9S-PST-build-APPL-PASS-FV 1-child by 2-chief
   ‘The house was built for the child by the chief.’ (Chichewa)

(40) a. Omw-ana k∅-ombakh-il-w-a en-ju ne omw-ami.
   1-child 1S-PST-built-APPL-PASS-FV 9-house by 1-chief
   ‘The child was built the house by the chief.’

b. En-ju y∅-ombakh-il-w-a omw-ana ne omw-ami.
   9-house 1S-PST-build-APPL-PASS-FV 1-child by 1-chief
   ‘The house was built for the child by the chief.’ (Lubukusu)

These data (which were elicited to be identical in both languages to rule out any possible confounding factors) show the predicted variation; there exists a benefactive applicative with symmetry in one language but asymmetry in the other. Specifically, while Chichewa has an asymmetrical benefactive in (39), Lubukusu has a symmetrical benefactive in (40). Chichewa, then, has the benefactive applicative of the type in (37a), while Lubukusu has the benefactive applicative of the type in (37b)—thus both possible types are attested. This variation is found more broadly: like Lubukusu, Kinyarwanda (Gary & Keenan 1977, Kimenyi 1980), Kihaya (Byarushengo et al. 1977), Kimeru (Hodges 1977), and Luyia (Gary 1977) have been described as symmetrical in the benefactive (as cited in Bresnan & Moshi 1990:47), while other languages like Chimwi:ni (Kisseberth & Abasheikh 1977) and Hibena (Hodges & Stucky 1979) have been described as patterning with Chichewa in being asymmetrical with benefactives.

While Bresnan & Moshi (1990) focus on benefactive applicatives, the variation in whether a particular type of applied object is (a)symmetrical shows similar variation with other types of applied objects. As with the benefactive applicative, the instrumental applicative is also available in either high or low structures, as in (41), with the corresponding semantic denotations in (42).

(41) a. Instrumental Type A (High)

   \[ \text{HApplP} \]
   \[ \begin{array}{c}
   \text{AO} \\
   \text{HAppl} \\
   \text{VP} \\
   \end{array} \]
   \[ \begin{array}{c}
   \text{V} \\
   \text{VO} \\
   \end{array} \]

b. Instrumental Type B (Low)

   \[ \text{VP} \]
   \[ \begin{array}{c}
   \text{V} \\
   \text{LApplP} \\
   \end{array} \]
   \[ \begin{array}{c}
   \text{AO} \\
   \text{LAppl} \\
   \text{VO} \\
   \end{array} \]

(42) a. \[ [\text{HAppl}] := \lambda x\lambda e [\text{instrument'}(e, x)] \]
b. $[\text{LAppl}] := \lambda x \lambda y \lambda f_{e,(s,t)} \lambda e [f(e,x) \wedge \text{theme}'(e,x) \wedge \text{instrument}'(e,y)]$

Consider the instrumental applicative data which again compares Chichewa and Lubukusu, but here, the pattern is the opposite: Lubukusu has the asymmetrical scenario with the instrumental applicative in (44), while the cognate sentence in Chichewa in (43) is symmetrical (see also Baker 1988b, Alsina & Mchombo 1990, and Alsina & Mchombo 1993 for a description of the instrumental applicative being symmetrical).

   5.cup 5S-PST-break-APPL-PASS-FV 3.stick
   ‘The cup was broken with a stick.’

   3.stick 3S-PST-break-APPL-PASS-FV 5.cup
   ‘The stick was used to break the cup.’ (Chichewa)

(44) a. Si-kombe sj-a-fun-il-w-a lu-sala ne omw-ana.
   7.cup 7S-PST-break-APPL-PASS-FV 11-stick by 1-child
   ‘The cup was broken with a stick by the child.’

b. *Lu-sala lw-a-fun-il-w-a si-kombe ne omw-ana.
   11-stick 11S-PST-break-APPL-PASS-FV 7-cup by 1-child
   ‘The stick was used to break the cup by the child.’ (Lubukusu)

These data show that the opposite pattern from benefactive applicatives is observed for instrumental applicatives in Chichewa and Lubukusu: while the instrumental applicative is symmetrical in Chichewa, it is asymmetrical in Lubukusu.

The third applied object type I discuss is locative applicatives. As mentioned in section 4.3, there is considerable variation across Bantu as to whether locatives are class-marked nominals or prepositions, but for many languages, locatives are licensed by applicatives and can thus be assumed to be arguments, at least in those languages. Given this, locative applicatives are predicted to vary in comparable ways to other applied object types. The structures in (45) indicate the two possible kinds of locative applicative that in principle exist.

(45) a. Locative Type A (High)

```
  HApplP
  AO     Appl'
       HAppl VP
           V VO
```

b. Locative Type B (Low)
The predicted variation with locatives is borne out with the object marking the data in (47) - (49) where Kinyarwanda shows an example of a symmetrical locative, while Lubukusu and Chichewa both show examples of asymmetrical locatives.¹⁹ Note that for Kinyarwanda, agreement with locative classes is neutralized, and all locative classes (16, 17, 18, and 23) trigger class 16 agreement—a feature of various “Great Lakes” Bantu languages (Batibo 1985, Maho 1999).

(47) a. M-lenji a-na-u-dul-ir-a m-nyumba.
1-hunter 1S-PST-3O-cut-APPL-FV 18-9.house
‘The hunter cut it in the house.

1-hunter 1S-PST-18O-cut-APPL-FV 3-bread
‘The hunter cut the bread there.’

(Chichewa)

(48) a. Umu-higi y-a-ha-tem-ey-e igi-ti.
1-hunter 1S-PST-16O-cut-APPL-FRV 7-tree
‘The hunter cut the tree there.’

b. Umu-higi y-a-gi-tem-ey-e mw’i-shyamba.
1-hunter 1S-PST-7O-cut-APPL-FRV 18 5-forest
‘The hunter cut it in the forest.’

(Chichewa)

(49) a. Omu-hayi a-∅-ku-khal-il-a mu-n-ju.
1-hunter 1S-PST-3O-cut-APPL-FV 18-9-house
‘The hunter cut it in the house.’

b. *O-mu-hayi a-∅-mu-khal-il-a ku-mu-kati.
1-1-hunter 1S-PST-18O-cut-APPL-FV 3-3-bread
‘The hunter cut the bread there.’

(Lubukusu)

As with benefactive and instrumental applicatives, there exists a language for which the locative applicative is symmetrical and for which it is asymmetrical.

The fact that there exists a language which is symmetrical and asymmetrical for each of the three core applicative types is evidence that there is no universal link between the applied object type and a particular symmetry pattern. This was shown explicitly here by giving evidence from the three core types of applicatives in Bantu (benefactive, locative, and instrumental), which are categorized by their morpho-semantic
type, as discussed in section 4.3. This inter-language variation of applied objects follows directly from the proposal that the syntax and semantics can independently vary. Unlike other approaches, this analysis assumes no inherent link between applied object type and its syntactic position, and thus the two are expected (and, indeed, do) vary among languages. While other accounts have observed many of these facts independently, they have attempted to link the symmetry properties to universal generalizations about, e.g. thematic role, which fail to capture the cross-linguistic arbitrariness described here.

6 Conclusion and Directions for Future Work

In this paper I have argued against a strict correlation between semantics and syntactic structure with respect to applicative morphology. Ultimately, I have proposed that the two must be allowed to operate independently, and I have shown that formally there is no restriction in doing so. Specifically, I have made two broad claims. First, I have argued that the relationship between the syntax of a particular argument and its semantic meaning is not necessarily correlated in the case of applied objects. Second, I have shown that there has been a reliance on the semantic nature of the applied object (via its categorization by thematic role) to derive object asymmetries in Bantu applied objects, and—citing on work the lexical semantics of argument realization—I have argued that generalizations built on thematic role (directly or indirectly) cannot capture the observed variation in Bantu applied objects. I propose instead that what have been categorized as thematic role labels are better categorized by specific morphological and semantic aspects of the applied object. This approach makes various predictions about the syntactic and semantic properties of the benefactive applicative, the c-command facts in otherwise symmetrical languages, and it also fits with the variation found with the object symmetry facts among various Bantu languages. By nature many of the morphosyntactic facts presented are unique to the Bantu languages, such as the nature of locative prefixes and the marking of noun classes more generally. I expect, however, that studies of (a)symmetries in other language families would show comparable kinds of syntactic and semantic variation. I leave this interesting question to future research.

While I have laid out a general framework for discussing the semantic and syntactic nature of applied objects in Bantu languages, there are many other language-specific facts that intersect with the framework proposed here. A mélange of syntactic, semantic, and discursive components of the grammar should be investigated in understanding the object symmetry facts in a given language. Already, recent work has started to look at other influencing factors on object symmetry, such as the role of pronominal arguments (Baker et al. 2012) and how dislocation constructions affect symmetry (Zeller 2015). This kind of multivariate approach has been widely assumed to be the case for other language families. For example, in English, it has been argued that argument realization patterns of the dative alternation are affected by various, interrelated factors such as verb class (Rappaport Hovav & Levin 2008, Beavers 2011), information structure (Goldberg 2014), or a mix of various factors such as noun animacy, NP weight, pragmatics, etc. (Bresnan et al. 2007). For Bantu languages, Jerro (2019a) proposes that verb class affects the behavior of objecthood facts in Lubukusu, and other work has
shown that information structure is a core component to argument realization across the family (see, e.g., van der Wal 2016 and van der Wal & Namyalo 2016). Finally, variation in inherent Case assignment may also play a role in the behavior of arguments within the Bantu family (Diercks 2012, Halpert 2012). How these various grammatical facts come together around applied objects in Bantu is an area ripe for future work, and I believe these can be framed around the ideas presented here.

An issue which I do not have space to discuss is that a growing body of work has described uses of applicative morphemes which do not license a new argument but rather modify the semantic and/or pragmatic interpretation of the predicate (Harford 1993, Marten & Kempson 2002, Marten 2003, Creissels 2004, Cann & Mabugu 2007, Bond 2009, Jerro 2019b). The question of how (and whether) these uses interact with the grammatical function of applied objects is an open question.

An empirical wrinkle that I do not address is that objecthood diagnostics vary in their behavior across languages. For example, Baker (1988b) discusses beneficiaries as being asymmetrical while instrumental applicatives are symmetrical with regards to object marking and extraction in a relative clause in Chichewa. However, in an appendix, he points out that passivization in fact behaves distinctly (384ff); it turns out that both the instrumental and benefactive constructions are asymmetrical in the passive, despite the instrumental applicative being symmetrical elsewhere. Comparable examples of diagnostics patterning distinctly across applicative types have been observed to in the literature, but a conclusive answer has yet to be determined. While the present article also does not engage with this question, the multivariate approach suggested above is an important starting point for understanding the kinds of variation found in diagnostics for symmetry across Bantu languages.

The central claim of the present paper is that the syntax and semantics of argument licensing heads are not tied together in the ways that previous literature has assumed. The findings of the present paper are that the category of an applied object does not require any particular syntax of that object, and in turn the syntactic structure does not correlate with a particular semantics. The degree to which this proposal bears on other argument-licensing heads such is an interesting question for future research.

References


